

CLAIMS

What is claimed is:

1. A semiconductor device comprising:

5 a substrate which includes a base layer, a buried oxide layer, and a semiconductor layer; and

an isolation layer which is formed in a trench that defines an active region on the semiconductor layer,

10 wherein the trench comprises a first region having a depth less than the thickness of the semiconductor layer and a second region having a depth as much as the thickness of the semiconductor layer, and wherein the isolation layer includes an oxide layer and a nitride liner that are sequentially formed along the surface of the trench and a dielectric layer that fills the trench.

15 2. The semiconductor device of claim 1, wherein the depth of the first region is less than the depth of the second region by 200 to 1500 Å.

3. The semiconductor device of claim 1, wherein the oxide layer is thicker in the first region than in the second region.

20 4. The semiconductor device of claim 3, wherein the oxide layer is thicker in the first region than in the second region by 1 to 50 nm.

25 5. The semiconductor device of claim 3, wherein the thickness of the oxide layer in the second region is in the range of 3 to 30 nm.

6. The semiconductor device of claim 1, wherein the thickness of the nitride liner is in the range of 3 to 20 nm.

30 7. The semiconductor device of claim 1 further comprising a transistor formed in the active region.